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TI Binding geopolymeric mixture
IN Skvara, Frantisek; Allahverdi, Ali
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CC 58-1 (Cement, Concrete, and Related Building Materials)

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CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
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AB The binding geopolymeric mixture for production of mortar and concrete consists of power plant fly ash (surface area of 100-600 m²/kg) 35.01-93.90, portland **cement** clinker and/or granulated blast-furnace slag ≤40, an alkaline activator (e.g., a mixture of sodium **water glass** and/or potassium **water glass** and NaOH and/or KOH with a SiO₂/Na₂O or SiO₂/K₂O ratio of (0.1-1.0):1) 5-15, and an Al additive containing ≥35 weight% Al₂O₃ (e.g., Ca **aluminate**, **aluminate cement**, gibbsite, boehmite, anhydrous Al₂O₃, (calcined) bauxite, aluminous **clay**, marl, Al(OH)₃, mica) 1.1-9.99 weight%. The mixture hardens at 15-95°. Thus, no hydrothermal treatment is necessary. The geopolymer structure with a 2- and 3-dimensional network is formed by reaction of Al atoms from the Al additive with silicate groups in fly ash. The hardened products have a low porosity and high resistance to acid corrosion.

ST binder geopolymeric mixt; **cement** geopolymeric mixt; aluminosilicate geopolymeric mixt